LOUISIANA conservationist

MAY — JUNE, 1977

...comments

What we call public opinion is
generally public sentiment.
— Benjamin Disraeli

J. BURTON ANGELLE, *Secretary*

In two separate instances during the past few months it has become increasingly obvious to me that what we so casually call public opinion is usually the deeply felt convictions of a large number of people regarding a situation or an issue that affects many people. I have always found that complex problems are easier to solve when public opinion is sought and received.

The two instances I refer to are the responses to the post card questionnaire sent to readers of the Louisiana Conservationist about future plans for the magazine; and the series of five public hearings conducted by the department to receive input from commercial and sportsfishermen regarding present use of monofilament gill nets.

In both cases the response of the public was gratifying and thought provoking. I would like to express personal gratitude for the outpouring of thoughts and recommendations on these two matters that are of immediate concern.

I would like first to report on the thousands of post cards that were mailed back to us from readers of the Louisiana Conservationist. They continue to arrive in the mail, but it is highly improbable that percentage projections obtained from 20,000 cards will be changed by receipt of additional responses.

Based upon the first 20,000 cards received from readers, it is apparent that 80 percent of the persons receiving the wildlife and fisheries magazine wish to continue receiving six issues a year. They feel the publication should be a bi-monthly one and not a quarterly.

In response to one of the questions: "I would not mind seeing limited advertising in the Conservationist," 78 percent of our readers answered affirmatively. There were reservations as to the type of advertising, but readers are assured it would be high quality, supervised advertising if final appraisal indicates this would help solve the problem.

The tally on a very important question showed that 77 percent of our readers would be willing to pay a reasonable subscription price for the bi-monthly publication. Full projection of this part of the survey indicates that three out of four persons would be willing to pay a modest subscription price. This is gratifying.

Our statistical section also revealed that 68 percent of those responding to the post card survey made comments about the magazine. These ranged from suggested means of obtaining revenue to continue publication free of charge to comments on editorial content of the magazine and fields of interest. I can assure you that these comments will be kept in mind in selecting material for publication and in efforts to improve the magazine.

We are grateful for your thoughts and for your response. A final decision has not been made at this time. It is my hope that full plans can be announced not later than July. I think it is proper to say that the great response to our post card survey far exceeded normal returns for such a survey. This reflects the interest of the people in a publication that is basically designed for the people of Louisiana. I asked for help in this survey and it was received.

The five public hearings mandated by Act 576 of the 1976 Legislature took members of the commission to Lake Charles, Baton Rouge, Port Sulphur, Houma, and New Orleans. Well over fifteen hundred persons attended the hearings and more than two hundred spoke. Approximately nineteen hours of testimony were taped and those tapes, along with written comments mailed in, are being reviewed by myself, members of the commission, and our technical staff.

These public hearings, revolving for the most part around the highly controversial monofilament gill nets and present populations of certain coastal saltwater fish, served the purpose for which they were intended. Those providing testimony did so in a dignified way. There were no disruptions.

This is the second instance I mentioned earlier when people responded on an issue. It may be that there are people problems associated with biological problems in the gill net dispute, but we are certainly in a better position to suggest remedial action when this wealth of input has been thoroughly sorted and takes directive form.

It would be presumptuous at the time these remarks are being written to infer even slightly that a final course of action has been determined by me, secretary of the Department of Wildlife and Fisheries, or by the seven-man commission. Testimony continues to be examined by officials involved in the hearings and by staff biologists.

The point I would like to make at this time is this — it is necessary to have public awareness and public involvement in the problems that affect management of Louisiana's wildlife and fisheries resources. I want to thank all of those persons who made the effort to attend one or more of the public hearings. Because of your sincere desire to speak your mind, to express your sentiments, we now have a better idea of what public opinion is all about.

It is my sincere hope that there will be more personal involvement in conservation matters in the future.

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LOUISIANA conservationist

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Frog Legs

By Clany Soileau
Photography By Lloyd Poissenot

The frog legs served at your favorite restaurant may have been shipped over 10,000 miles to wind up on that seafood platter. It's ironic, but commercially available Louisiana frog legs are on their way to becoming a rarity.

Almost all the frog legs consumed in the United States (and an undetermined but apparently major percentage of those gobbled up in Louisiana) come here all the way from India and Japan, and an increasing amount are being imported from Mexico.

Why should seafood dealers have to go such great distances to find frog legs? Strange as it seems there just aren't enough frogs to go around any more and the situation appears to be getting worse.

Louisiana's famous bullfrog (Rana catesbeiana) is a long way from being an endangered species, but even now more people want him than are able to get him.

Exact facts and figures are hard to come by. The frog is a mild creature. He isn't very glamorous. He can't soar like an eagle and his hide isn't in demand to make suitcases. So he goes relatively unnoticed. Although one can get a general impression of the present status of the bullfrog in Louisiana by asking questions here and there, no one has made a serious scientific effort to pindown exactly what's happening to Rana catesbeiana.

And there's a lot more to it than most people are aware of. Frogs, bullfrogs included, are vital links in the scientific search for facts about human health. Frogs are used around the world in bio-medical education and studies into how diseases work. Frogs are experimented on to find out what epilepsy is and what can be done about it . . . how blood is produced . . . how disease immunities are formed. Also, since frogs can regenerate parts of their bodies which are destroyed, scientists may one day develop techniques to duplicate this in humans if they can come to understand how the frog's body works.

Frogs are better research subjects than any other animal for several reasons. The most important reason is cost. With research money so hard to come by, every dollar saved allows more work to be done. Frogs are easy to keep, require little food or maintenance, and are relatively cheap, at least at the present time.

According to those who should know, most of the wild-caught frogs in Louisiana are going to universities and research centers. These sources reportedly pay higher prices for frogs than do seafood dealers.

There does not seem to be many seafood dealers who are even handling Louisiana frogs. Local frogs that do find their way onto restaurant tables are usually caught by small groups of men as a means of supplementing their income.

Several New Orleans seafood dealers said they no longer handle Louisiana frogs because they couldn't get them. Reasons varied. One said he simply couldn't get anyone to catch them. Another said the local frog legs were too expensive. And another pointed out that the local product was sporadic, whereas the frozen imported legs were always available. Whenever they did get an order they supplied imported frog legs.

Dalton Dugas, a dealer in St. Martinville, said there were frogs available in the Atchafalaya Basin but not enough to justify a large commercial operation. He said most of the froggers in his area do it only as a sideline, and although a frogger might take as much as 100 pounds in one night that would be an exception. He said he did have some for sale, however.

Forever?

(Or Bye-Bye Bullfrog)

S. J. Sampey, a Des Allemands dealer, says he has noticed a definite downhill turn in the number of frogs available in his area over the past years. He said that if there were enough frogs available they'd sell.

"The Indian frog is twice as large but the Louisiana frog is twice as good."

He feels that although such factors as the rising alligator population and saltwater intrusion have played a large part in the declining frog population, the biggest problem is overharvesting. He said that in remote areas there are still sizable numbers of frogs, but in the easily accessible spots it's tough going to get any.

W. J. Chatelain of Rayne blames the destruction of the frog's natural habitat in the Atchafalaya Basin for the decreasing numbers of frogs he's noticed over the past years.

"They're just not there any more," he said.

Chatelain said there are plenty of frogs locally because of the increase in crawfish ponds in his area. But . . . all the frogs his company handles go to the zoology and science departments at LSU and USL and to the Tulane and LSU Medical Schools.

Then where are all the frogs coming from?

Dr. Dudley Culley of LSU, a specialist in amphibians, estimates that perhaps as many as 80 percent of the frogs used in research in the United States come from Mexico.

As for food, that is frozen frog legs, statistical data is a little more readily available.

According to the National Marine Fisheries Service, in 1975 the United States imported 1,514,000 pounds of frog legs from India, 1,167,000 from Japan, and 617,000 from other countries. In 1976, from January to November, the latest figures available, we imported 3,732,000 pounds from India, 909,000 from Japan, and 1,466,000 from other countries, a total of 6,107,000.

Another interesting point arises when we look at the frog legs imported into the U.S. via Brownsville from Mexico. In 1974, no frog legs were imported there. In 1975, 50,000 pounds came across the border. And in 1976, 172,800 pounds were brought in.

Obviously native frogs are not meeting the demand and Louisiana is not alone in having a decreasing population of frogs. All across the country, and for similar reasons, Rana catesbeiana and his cousins are on the decline.

In California, according to Bob Treanor, an associate fisheries biologist with The Department of Fish and Game, that state has in recent years found it necessary to enact some pretty stiff laws to protect the frog. Treanor said setting seasons and bag limits is not the best way to control the frog population, but it's the only management tool available since it's difficult to control urban expansion and land use changes.

Under the new restrictions, it is illegal in California to take wild frogs for food commercially, but they can be sold to research facilities.

Sports froggers have a bag limit of 12 and can take frogs only from April 1 to November 30. Commercial froggers have no bag limit and can work from May 1 to November 30. There are various permit requirements which must be met before *anyone* can take frogs commercially.

The situation in California is quite different from that in Louisiana in several ways, but they are apparently similar in that ecological changes in the frog's native habitat have played the greatest part in reducing the creature's numbers.

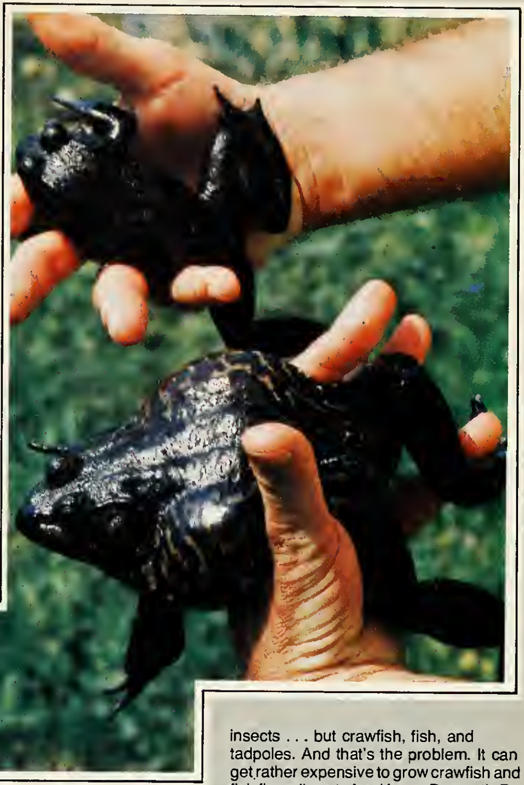
Dr. Culley said he wasn't sure that a closed season in Louisiana would do any good. One female frog will lay up to 25,000 eggs and a single female could, if mortality were kept down and habitat were in optimum condition, repopulate an entire area.

Louisiana now has a two month closed season, April and May. But according to Dr. Culley's research at LSU most frog spawning takes place in the first two weeks of March. This is especially true south of a line drawn through Baton Rouge. Spawning may occur later in the northern part of the state.

Dr. Culley has done considerable research into the spawning habits of frogs with the ultimate goal of being able to control the frog's reproduction so that they could be raised under laboratory conditions. He has found out that a frog's spawning seems to be related to several factors. Water temperature, day length, and male choruses seem to play a part in getting a female to spawn. Females will frequently ignore a single male and migrate to large groups of calling males.

Frogs spawn in backwater areas and this is one reason that habitat destruction takes such a high toll. Land use or ecological changes such as levee construction, herbicide use, or channelization, which will lower weed cover along a shoreline, either dry up areas of shallow backwater or increase stream flow. Both damage the frog population. In running or high water a frog's eggs are flushed away to deep water where there is no food for the tadpoles.

Once hatched the tadpoles live a precarious existence. Sunfish, bass, and even adult frogs eat them. They will die if the water dries up. Disease bacteria, which are present in every wild-caught frog, may suddenly become epidemic and



The dramatic difference in size between a super frog and an average frog, both four months old, is obvious. The super frog's accelerated growth rate may make commercial frog forms a reality one day.

destroy all the tadpoles in a pond, especially if the frogs are put under any stress and are disturbed. Many tadpoles will succumb to pesticides or other chemical pollution. All these factors continue lowering frog numbers through adult size.

And once they're caught the frog's numbers are reduced further by poor handling during shipment. Dr. Culley estimates that anywhere from 50 to 80 per cent of the bullfrogs captured for use in teaching and research die before use. However, not all of these are lost since many of them can be used as preserved specimens.

Improper handling (often the frogs are simply thrown into a burlap sack and kept in the back of a car or truck) puts severe stress on the animals, and they die from stress or infection. One way to increase the supply of bullfrogs available for human use would be to develop better methods of handling them while they're being shipped. Keeping the animals in holding pens where they could be rested and fed at various points between their capture and use would greatly increase survival.

It seems apparent that the bullfrog has a very uncertain future in its natural state. Since frogs are so important to research and education, many people are now trying to develop techniques to raise the animals under domestic conditions, much like the poultry industry.

There were two major problems to be overcome before laboratory culture of these animals could become feasible: (1) development of nutritional and economic foods for the animal at all stages of its life cycle, and (2) the control of reproduction and disease.

Dr. Culley now feels it is economically possible to produce tadpoles and small bullfrogs with a three inch snout-vent length provided they are sold directly from the producer to the research facility or school.

Culture of the adults, i.e. getting anywhere near growing them for food, seems a long way off. Contrary to popular belief the major diet of a bullfrog is not insects . . . but crawfish, fish, and tadpoles. And that's the problem. It can get rather expensive to grow crawfish and fish fingerlings to feed frogs. Presently Dr. Culley doesn't feel large adult bullfrogs can be produced for less than six to eight dollars each.

Selective breeding may be the answer to the problem of how to raise a large frog for food. Dr. Culley has observed that in every lot of tadpoles there are a few "super frogs" that will weigh as much as one pound in four months, whereas most will only reach one-third to one-half pound in 10 to 12 months after metamorphosis. If these superior frogs could be isolated so that they could, in turn, produce faster growing frogs which more efficiently convert their food into flesh, production of adults might become economically feasible.

The bullfrog in Louisiana is a puzzling critter. It's difficult to find out if he's in trouble or not, and if he is it's hard to see what can be done to help him. Let's hope there'll never be a time when Louisiana's wild frogs are conspicuous only by their absence.

New Acreage at Manchac WMA

Lloyd Poissenot

Shown seated with Gov. Edwin Edwards at the Act of Sale for the additional land to be part of the Manchac Wildlife Management Area are Doyle G. Berry, left, commission chairman, and Frank B. Williams, right, president of Williams, Inc., which sold the land to the commission. Standing, from left, are commission members Donald Wille, vice chairman, Jean Lapeyre and Jerry G. Jones; Harvey Clay Luttrell, J.C. Gilbert and Marc Dupuy, Jr.

The Louisiana Department of Wildlife and Fisheries recently bought 3,064 acres of wetlands in St. John the Baptist Parish, as an addition to the Manchac Wildlife Management Area. The tract, purchased for $459,605 from Williams, Inc., of New Orleans, brings to 8,325 the total acreage in the wildlife management area.

It brings the total amount of land purchased by the department, since it began its acquisition program in 1960, to 245,061 acres, all of which is permanently dedicated to recreational use by the public.

Act of Sale took place at the Governor's Mansion and was made possible under a capital outlay program authorized last year by the Louisiana Legislature.

The new area consists primarily of wetlands, offering excellent habitat for waterfowl and shore birds, fishing, and some small game hunting. In addition to rabbits and snipe, other wildlife on the wetland tract includes furbearers such as nutria, raccoon, mink, otter, muskrat, and alligators.

J. Burton Angelle, department secretary, said the land purchase negotiations were accomplished through the efforts of Frank B. Williams, New Orleans, president of Williams, Inc. and an avid sportsman, and that the acquisition of this tract marked a step forward in the program of land acquisition.

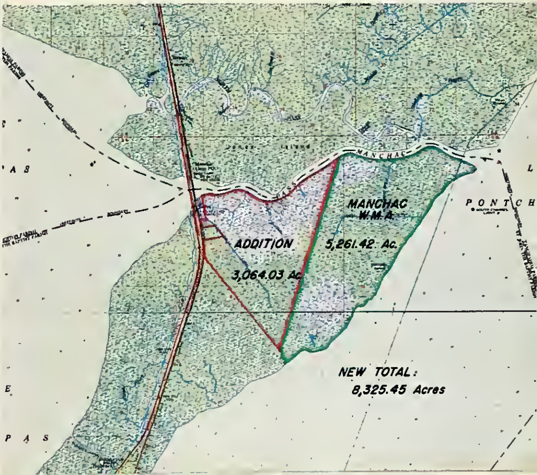
The only access to Manchac Wildlife Management Area is by boat. The area's canals and bayous were opened to public fishing immediately, and the new addition (as well as the previous tract) would be open to public hunting this fall. Regulations for Manchac Wildlife Management Area will be found in the digest of hunting and fishing regulations when it is published in September.

Manchac Wildlife Management Area received its name from both Pass Manchac, which links Lake Maurepas with Lake Pontchartrain, and from Bayou Manchac. It was called Ascantia by the Indians, Iberville by the early French, and finally Manchac during Spanish domination. Iberville explored this area in 1699.

At one time Fort Bute, named for the third Earl of Bute, Prime Minister of England at the time West Florida (the Florida parishes of Louisiana) came under British rule, stood at the mouth of Bayou Manchac. The entire area is rich in historical lore.

The nature of the terrain makes it a valuable addition to the commission's wildlife management area system.

Lloyd Poissenot



LOUISIANA CLAMS...

A NEW FISHERY?

By McFadden Duffy
Photography By Lloyd Poissenot

Louisiana is known nationally for abundant supplies of shrimp, oysters, and crabs. But it comes as a surprise to most persons that the state has potential of becoming an important source of clams, which are ideal in the manufacture of certain processed foods such as chowder. Some persons now believe the clam fishery surface has barely been scratched.

Experimental commercial harvesting in the Battledore Reef area of Breton Sound began early this year. Already clams dredged by one large converted oyster boat have yielded enough meat to interest processed food manufacturers and make the new fishery profitable. Louisiana clams have substantially augmented production of East Coast surf clams, which until recently were the only major source of clam meat in this country.

The pioneers of what is virtually a new industry are hopeful that clam production can be increased to a high sustained yield. This would assure permanence of the fledgling fishery and help satisfy demand of food processors for a new source of clam meat supply.

Louisiana has some things going for it that should give impetus in this bid to become an important clam harvesting state. It has a long way to go but some indicators are bright. During the last two years in particular, East Coast clam fishery operations have been set back by oceanic pollution and dwindling supplies of surf clams. In some areas this has been brought about by overharvesting and haphazard resource management. Recent declines in clam landings in those East Coast areas have made those harvested supplies inadequate for processing demand.

Latest available figures reveal the total U.S. commercial clam catch (virtually all caught on the East Coast) amounted to approximately 113.2 million pounds of clam meat. The dockside value of this catch was approximately $43.7 million. Also, approximately 3,775 persons were employed in about 130 onshore clam processing plants in 1975. The wholesale value of this processed clam meat amounted to $106.8 million.

Hard clams, which are the ones now being harvested in Louisiana, are fished commercially in 16 states. There are approximately 17,000 fishermen employed in the industry. Commercial harvesters of hard clams were paid $21.7 million for the 14.8 million pounds of hard clam meat landed in 1975.

It doesn't take complicated mathematics to prove that the national clam business is a big one. But meeting the demand for clam meat has become costlier for food processors. The general decline of the East Coast clam fishery has caused buyers to shop around. Some have taken a closer look at what is available in Louisiana.

One economic spinoff of this decline in East Coast production of clams has been a price increase of nearly 400 percent. Additionally, the uncertainty of supplies of surf clams has caused some processors to curtail operations. Those taking a better look at Louisiana include major bulk consumers of clam meat. Louisiana's untapped coastal waterbottoms might offer an answer to the search for new supplies.

One of the significant molluscan species harvested commercially and the species present in Louisiana is the quahog (or hard clam) *(Mercenaria campechiensis)*. The name becomes even more confusing because there are three size variations: the smaller ones are called *little necks;* those in between the smaller and larger ones are called *cherrystones;* and the larger ones are called *chowders*.

Hard clams are found in most high salinity bays, inlets, and sounds along the Atlantic and Gulf coasts. They apparently inhabit the ecological niche outside the one inhabited by oysters. Water depth is of no importance and they occupy a band along the entire Louisiana coast. In most cases they are found roughly about six inches below the surface of the bottom, but are capable of moving both vertically and slightly horizontally in the sediments.

Because of depth, the conventional oyster dredge would fall a little short on occasions when clams were down deep in mud, but

Capt. Baldo Pausina, left, lifetime oysterman deserves full credit for Louisiana's first successful clam harvesting efforts. Modified oyster dredge (lower right) was designed by Capt. Pausina and his son Buddy to reach clams which are often buried in several inches of mud.

works well when they are up near the top of the mud. In some cases clams can be found exposed to the water column. This presents a problem when the harvester is trying to fish them, or trying to locate them with a dredge.

Clams spawn in the summer. Fertilization is external. Clam larvae is at the mercy of the currents for about 20 days. Then it settles to the bottom and assumes the clam form we know. The large chowder clams being fished now in the state take at least three years to reach that size. They may survive as long as 17 years, being able to reproduce in about a year and a half.

They have a large wedge shaped portion of their body called a foot (which provides most of the meat portion of the chowder clam). It is used to pull themselves both in sediment and along the bottom. It is the primary means of locomotion for clams.

That the state's coastal waterbottoms hold large numbers of clams has been known to biologists and oyster fishermen for a number of years. Long ago, department scientists identified and classified the types of clams that were present. It was known that the quahog was abundant, but a true estimate of the quantity available was never made. Assessment of the supply of hard clams is still not really known. Hopefully, a study will be funded to inventory the stock. Full information would be of great help in formulating a management program for Louisiana that would make these clams renewable resources.

Although cherrystone clams are widely known in the half-shell trade where they are served with a catsup-horseradish sauce or lemon juice, there is little demand at the present time for this size quahog from Louisiana. The same is true of little necks, the smallest quahogs used in the half-shell trade. It is possible that a demand for cherrystone and little neck clams will be built up if supplies of clams from the East Coast continue to decrease. The smaller quahogs are certainly the most expensive when moved in the trade, but specific markets would have to be developed for Louisiana clams.

It follows then that the mature quahogs are the most desirable

Hard clams, known as chowders in the trade, are the only clams taken in Louisiana's newest fishery. The Pausina dredges are designed to take only the larger clams, leaving small clams to replenish producing areas. Buddy Pausina, full partner in the venture, is shown holding some of the clams that may start new fishery for Louisiana.

ones on which to establish the new Louisiana fishery. Although most frequently used in the making of popular chowder, they are also minced, diced or coarsely ground for other food uses. Stuffed clams, somewhat similar in the making to stuffed crabs, are flavored with minced or diced clams.

Capt. Baldo Pausina, a successful and well known oyster grower, is credited with the start of Louisiana's commercial clam fishery. For years he had tested coastal waterbottoms in his quest for oysters and had observed concentrations of quahogs. He finally became convinced they existed in sufficient quantity to launch a profitable fishery.

For five years the soft-spoken oysterman entertained the feasibility of harvesting Louisiana clams in commercial quantities. He kept himself posted on the upheavals in East Coast clam operations and conferred with biologists of the department about his conviction that Louisiana could become important in the national clam industry.

Finally, in the summer of 1976 he conducted an exhaustive search of waterbottoms in southeast Louisiana. Ron Dugas, biologist with the division of seafoods, was assigned to work with Capt. Pausina and his son Buddy. Dugas' job was to keep the department informed on biological aspects of this commercial fishery probe. Aboard the big, comfortable oyster boat "Katricia," he and the Pausinas compared notes and took up a fishery challenge.

Last fall, Capt. Pausina applied to wildlife and fisheries for an experimental lease in the Battledore Reef area. The special lease was granted. It marked the first time in history that a lease had been approved for the taking of edible clams from state waters. Members of the department and other oyster fishermen waited almost impatiently for the first reports of the then uncertain commercial fishery venture. The Pausinas were gambling their hard-won knowledge of the sea, their determination, and their money. For father and son who had spent their lives harvesting the sea, it was a challenge they could not resist.

The two men lost little time in completing two special dredges

for the clam operation. They are conventional oyster dredges fitted with water manifolds which serve dual purposes. They clean the clams of mud and help lift the clams from the sediment. Twin dredges were designed so that one could be used on each side of the forward deck of the "Katricia." Part of the success of the Pausina clam operation thus far is due to the special dredges and how they were designed.

It takes a lot of know-how to regulate dredges for clams, as well as for oysters. The amount of chain slack is important and it has to be the same consistently in order for the dredge to fish with maximum efficiency. Too much slack in the chain will result in dragging the dredge. And, even though two dredges may look identical, sometimes there are differences. On occasion it is the weight that causes them to work differently. Most oyster fishermen will agree that maximum production with oyster or clam dredges calls for skill.

Many of the ideas about the Pausina clam dredges were formulated during those late summer days when Dugas accompanied the Pausinas on what might be called the final exploratory trips in southeastern Louisiana. At that time they were operating on a scientific permit issued by the commission. Dugas had taken over the task of monitoring the work of his friends, and reporting on it.

There was no secret about Capt. Pausina's plan to harvest Louisiana clams. The new venture was not destined to be an irrevocable departure from a lifelong career of harvesting oysters. Everyone concerned knew that the large oyster boat could be converted back overnight to its role as a highly proficient oyster dredge. Everyone also knew that Capt. Pausina was willing to put time and money into the attempt to harvest clams commercially. It boiled down to being simply a question of whether he would succeed.

Because of recent interest in what the Pausinas have been able to harvest in the way of edible clams, further words of explanation are due. Basic reasoning behind the lease issued to Capt. Pausina in the fall of 1976 was simple: he would pay a percentage of the profits. It amounted to a "stumpage fee," best suited to the interests of the department, and one that would not serve as a deterrent to the speculative project.

Rugged winter weather hampered initial efforts, but the day came when the "Katricia" wallowed back to port with its forward deck bulging sacks of fresh clams. The first step in establishing a

Clams are sacked by the bushel aboard the converted oysterboat "Katricia" and slated for delivery to New Orleans-based shucking plant where clam meats are removed and frozen. Lower right, a Pausina galley special: spaghetti and clams in a butter sauce.

Vietnamese refugees, now residents of New Orleans, make up the greatest part of the labor force in the shucking lines. Lower right is closeup of Louisiana clams as they look when removed from the shells.

new fishery industry had been taken. In the first three months of 1977 the Pausinas were to take over 7,000 bushels of clams.

This certainly didn't dent the supply of clams available for harvest in Louisiana, even though 7,000 bushels of clams will provide the most necessary ingredient for a thick, nourishing bowl of clam chowder for every man, woman, and child in bustling Baton Rouge. And that's a lot of clam chowder.

As pointed out earlier, the optimum zone for clams extends along the entire Louisiana coast. They are more abundant in some areas due to environmental conditions and the distance from shore varies with different localities. Important point is there exists ample room for more people to get into the business of fishing and selling clams.

It is important to stress that with clams, as with other resources of the sea, there is a maximum level of harvest which can be replaced each year. Because taking of clams is new in state waters, it is possible to regulate this potential industry from the start. The vast acreage containing clams can be rotated so that overharvesting will not occur and disasters of clam fisheries on the East Coast can be avoided. Potential revenues in the immediate future for the clam industry, from both catch and sale, is largely dependent on whether the new industry is managed soundly. The bonanza lies untapped, but long-range future hinges on management.

As economic architects, the Pausinas have tailored their operations thus far to provide maximum benefits for Louisiana. The sacks of fresh clams are transported by truck from the dock to shucking platforms operated by a New Orleans concern. There the large clams are quickly opened and the meat placed in containers to be frozen. This operation somewhat resembles oyster shucking, but there are special tricks in every trade. Clams call for special handling.

Important point is that fishing and processing operations have been kept in the state as much as possible. Just how big all facets of this potential industry can be depends a great deal on demand for Louisiana clams by packaged food manufacturers and the desire of Louisiana fishermen to become either fulltime or parttime clam fishermen. The rest is just a matter of economics.

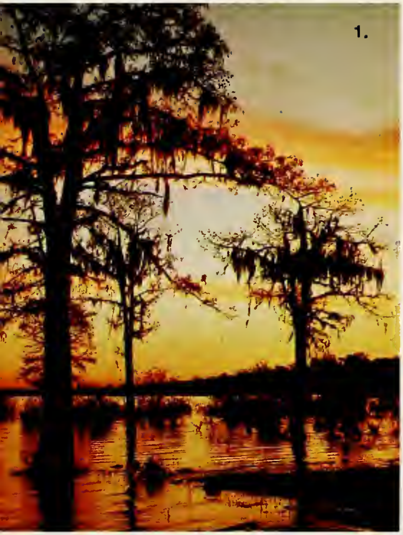
The Pausinas and Dugas feel there are many additional species of mollusk, crustaceans, and fish present in Louisiana waters that are left unharvested. This is because changing the eating habits of people often calls for substantial investment of time and money. As for Louisiana's clam industry . . . there are many questions that are being answered and others arising. A lot is known about Louisiana's clams now, but there's a lot to be learned. One thing is certain. In this case, the Pausinas made a great effort

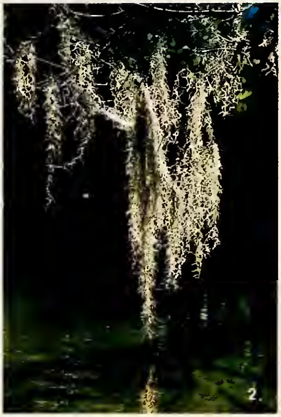
1.

Using a minimum of three different exposures (preferably f-stops for each shot is called "bracketing." Do this by shooting the exposure setting shown in the meter, one f-stop above the setting, and one below. Especially important in a backlighting situation.

2.

"Backlighting" is useful to isolate a subject and increase contrast. Notice how the detail of the moss stands out with light coming from the rear. Also notice how dark it makes the background, giving the moss a "spotlighted" effect.





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Story and Photography By Lloyd Poisse

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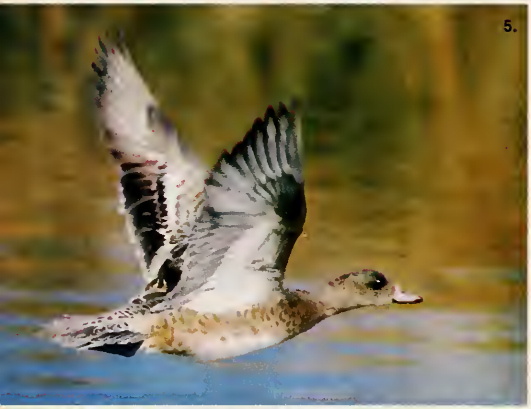
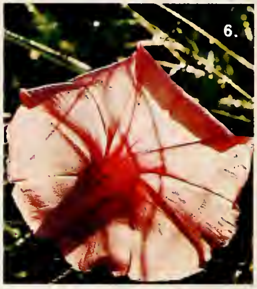




5.

Moving with the subject is called "panning" (but moving without the subject is called motion!). Use panning to minimize subject motion and throw the background totally out of focus. Panning on this flying duck made it come alive, crisp, and ultra-sharp.

6.

Some "close-up" capability is always desirable. It is easily achieved with either close-up filters or macro lenses. But both give short depth-of-field (what remains in focus), so focus is critical. Close-ups are appealing . . . but they are tedious.

3.

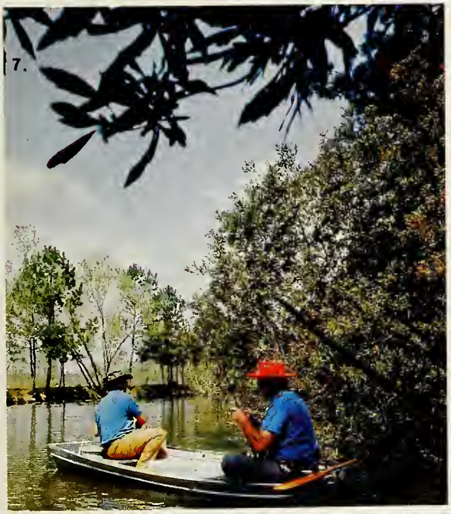
Telephoto lenses can be used for scenics (and for close-ups in lieu of a macro lens, but they extremely shorten depth-of-field). Use a shutter speed as fast as focal length is long – if you use a 200mm lens, use a minimum shutter speed of 200. But watch camera movement with telephotos!

4.

Overcast days bring out colors in pastels. They make pleasing shots and are advantageous for taking "facials" because lighting is soft and even. Be careful, however, to avoid expanses of sky (which will appear bleached) and large shadowy areas (they detract detail).

3.

4.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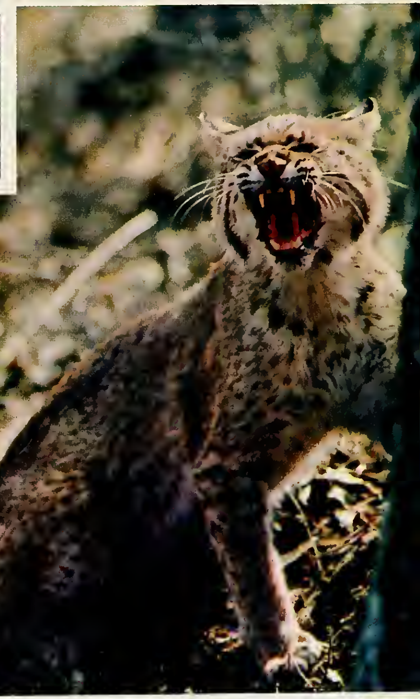

8.

7.

The biggest fault in most photographs is lack of "composition," the relationships of everything making up the picture. Framing tightens action and gives three-dimensional quality. Best advice: fill the frame – hold up a branch in the foreground or move closer to the subject.

8.

Backlighting is sometimes unavoidable – and it is tricky exposurewise. But by bracketing, by metering a neutral area (not dark/not light), and with practice, the technique can prove rewarding. Notice what backlighting does for the fur on the bobcat.

A "Nichols-Worth" of CRICKETS

By Julia Murchison
Photography By Lloyd Poissenot

Would you believe Wallace Nichols is responsible for feeding a family of 1.5 million dependents every day? Well, to be more exact, he feeds them every four or five days . . . chicken mash . . . up to a ton!

Nichols and his wife own over a million live crickets, which they raise for natural fish bait in DeRidder.

"The business started thirteen years ago when we had crickets left over after a fishing trip to Bundicks Lake," he told me as we toured his operation. "My wife and I love to fish bream and when we got home we stored the crickets in a sand bucket for use later in the week. The next day my wife noticed what looked like thousands of baby fleas crawling around in the sand. Well, in a few days we realized that what we thought were fleas were baby crickets.

"For a time, we raised them strictly for our personal use. But the little critters started reproducing faster than we could hook them to a fishing line so we began to give them away to friends who fished. Eventually, we opened a small bait stand."

Before the Nichols knew it, their cricket business expanded and they found themselves in need of a suitable place to locate a full-fledged cricket farm. They found a perfect building — an old World War II mess hall at Beauregard Parish Airport. They rented it from the police jury and set up an operation that is amazingly organized and efficient.

"We learned from experience — just got in there and made mistakes," said Nichols. "There was very little printed information on raising crickets so we had to learn the hard way, on our own."

"What type crickets do you raise?" I asked him.

"We grow browns, originally imported from Australia. They're more prolific than our native blacks and fish love them. They make excellent bait. As far as I know, they are the only type grown commercially."

"I didn't realize commercial cricket farming was common."

"Oh yes, there are several other farms in Louisiana, most of them bigger than ours. There's even an American Cricket Growers Association."

"We don't belong, though," Mrs. Nichols joined the conversation.

"How do you manage so many?" I queried. We walked through the mess-hall-turned-cricket-shelter.

"It's all very simple . . ." Nichols began an explanation. "I use plywood pens . . . built most of them myself. Each pen contains 10 or 12 thousand crickets, but some hold as many as 17 thousand. I paint the inside walls of the bins with a high gloss enamel — keeps 'em from climbing out."

"Why white?" I noticed.

"I guess any color would do. It's the high gloss enamel that's the key — it makes the sides so slippery the crickets can't get a grip."

Each pen has row after row of cardboard egg crate dividers stacked on top of each other, about four or five high. "What are those for?"

"The crickets hide under them. Without the dividers, they'd smother themselves. This way it's possible for more crickets to live in one box."

He pointed to the gas heaters and fans which provide even circulation of heat throughout the building, explaining that a constant temperature of 90 degrees insures the most rapid development of the crickets. At the right temperature, they are ready for market in about 45 days. Lowering the setting by even five degrees can retard development as much as a week.

"What do they eat?" I asked.

"Just about anything, but we feed them high protein chicken mash. Depending on their size and age, a million crickets will eat as much as four or five hundred pounds of feed per day. That's about a gallon of feed per bin. When they are three to five weeks is when they eat most — crickets younger than three weeks or older than five weeks may consume only one or two hundred pounds of feed per day. Would you believe our annual feed bill exceeds $2,400?"

"What about water? Do they need water?"

Besides being caretakers for a million and a half tenants, the Nichols have other interests and activities. He is director of the DeRidder Housing Authority and she is a civil service examiner and cosmetics salesperson.

"Water is supplied by gravity-flow jars in each pen. Doughnut-shaped sponge rubber rings fit into the base of each jar to regulate the flow of water and keep the insects from drowning. We refill the quart jars with fresh, clean water regularly. Each time, we change the rubber rings and wash the used rings — in a washing machine — for sterilization. I don't know of any disease that attacks crickets, but we keep everything clean and sterilized with chlorine just to be on the safe side. And then after we sell each batch of crickets, the pens are carefully scrubbed with hot water and chlorine solution."

As long as the crickets remain in the plywood pens they will not reproduce because there is no suitable place to lay eggs, Nichols says. But as soon as a moist soil-like surface is supplied reproduction begins immediately.

When his crickets are about a month and a half old, he sends some to market and saves the rest for reproduction. When he's ready for them to reproduce, he puts them on a bed of moist peat in ten-by-

". . . crickets develop best when the temperature is kept a constant 90 degrees. At that level, they're marketable about 45 days after they're hatched."

twelve inch wooden boxes. The female deposits her eggs, which may number as high as a thousand, deep in the soil by means of a tube called an ovipositor. The tube is a projection from the tail and is about an inch in length.

"Crickets die soon after they lay eggs," he noted, "so they are no good as bait. I usually feed these adults to my chickens. Then I cover the boxes of peat containing the eggs with a sheet of clear plastic to preserve moisture and set the boxes aside so the eggs will incubate. Hatching takes place after about nine or ten days and the cricket nymphs, which look like adult crickets without wings, are placed in the plywood bins to mature. I keep track of their age by writing it on a notecard and taping it to the side of the box.

"Know what I find interesting? During development, the cricket outgrows its hard, outer skin. As the critter grows larger, the skin splits and falls off and a new hardened coat forms. This process occurs several times. By the fourth molt, wings begin to be visible and the female starts to show an ovipositor.

"During this molting process, there is also a color change. When they first hatch youngsters are a light gray color; but as they age they turn darker. I can almost tell their age by their color."

The Nichols, themselves, deliver the boxed crickets directly to bait stands. Service is provided at least twice a week, although during the busy months of April, May, and June, extra trips are often made to keep dealers supplied. The Nichols wholesale only to bait dealers around Bundicks, Anacoco, Vernon, and south Toledo Bend lakes. He also includes display cases for each dealer purchasing his crickets.

One surprise by-product of the cricket operation was the abundant "droppings." Nichols sent samples to Louisiana State University for analysis and he learned the scat was high in nitrate and phosphate content. So the couple now use gleanings from the cricket boxes as fertilizer in the garden, flower beds, and pasture.

Nichols has suffered only one disaster in his years as a cricket farmer. "One night someone nearby set a bunch of old tires on fire," he said. "Wind swept the smoke through the building and it killed every single insect. It cost me several hundred dollars to get started again."

Nichols and his wife don't count out individual crickets when they pack them for shipment — they've learned that 1,000 adult chirpers weigh almost exactly a pound!

When it is time to batch them for market, the Nichols work as a team to count and box the insects. Transportation is in small cardboard boxes, a thousand per box. Since it would be virtually impossible (and definitely time-consuming) to count the chirpers individually, the couple has devised an innovative method for tallying a thousand.

"Through experience, we found out that a thousand crickets weigh almost exactly one pound," said Nichols. "So I weigh them and pour each one-pound batch through a funnel into a shipping box. Then my wife stuffs in a potato for food and moisture and seals the box with tape."

Nichols insists his method of weighing the crickets is accurate. I witnessed the team weigh and box 12,000 crickets in about ten minutes.

"But weighing isn't the only way to sort out a thousand crickets," smiled Mrs. Nichols as she worked. "I found that a quart fruit jar, filled to the top, also holds a thousand."

I asked how much time the insects require daily.

". . . a million crickets, believe it or not, will eat as much as 500 pounds of feed a day!"

"Right now," he answered," I spend four or five hours each day . . . but during peak season it's not uncommon to stay out here until two o'clock in the morning. And almost every Thursday night is busy because we have to prepare for the weekend."

Though Mrs. Nichols insists that she and her husband are "partners," Mr. Nichols prefers that she limit her responsibilities to deliveries. "Feeding and watering this many crickets is just not women's work — it's strenuous and often dirty," he said emphatically.

The Nichols have no employees on the farm except in summer when they hire one or two high school students to help with the endless chores resulting from increased demands for live bait.

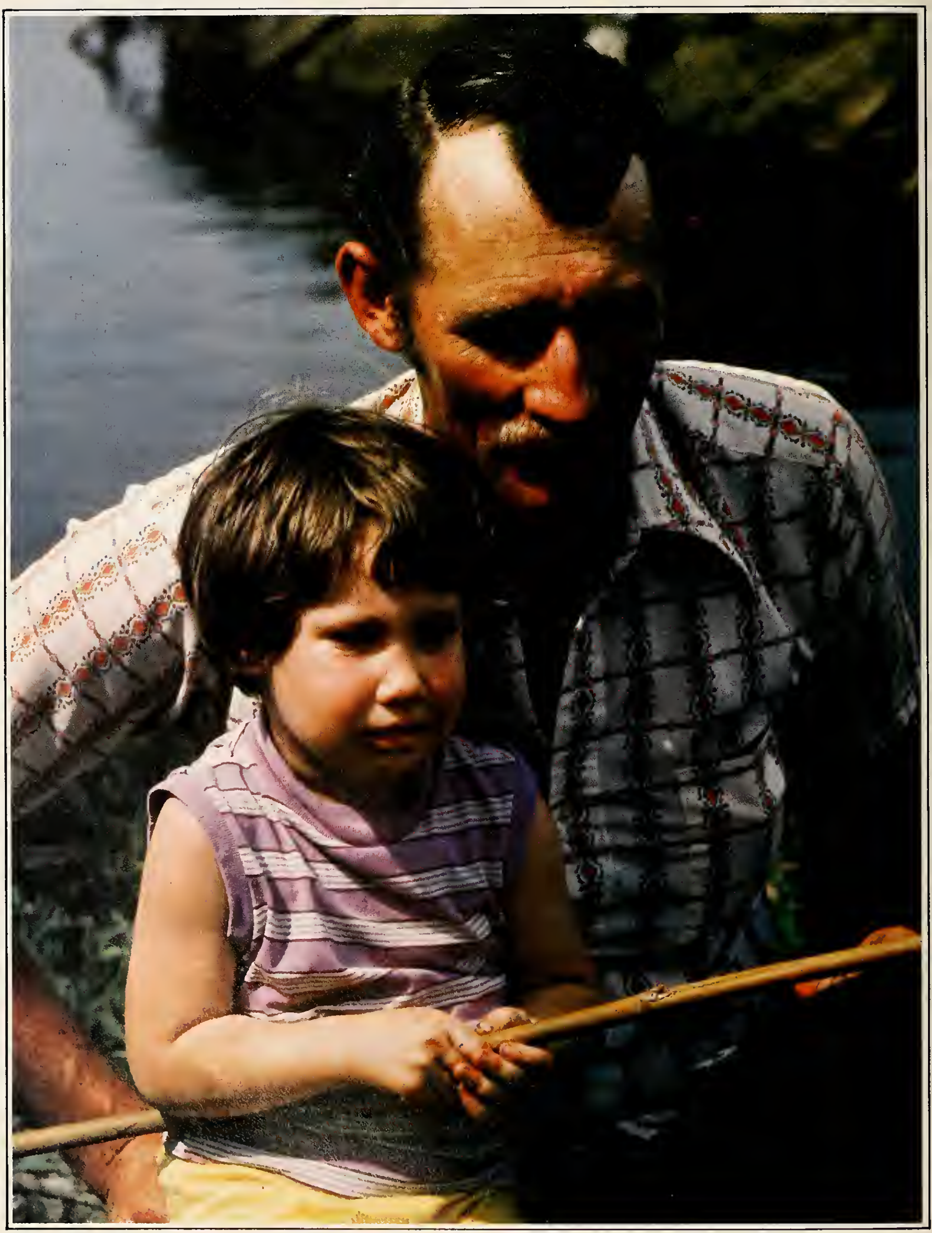
"We enjoy doing it ourselves," they smiled at one another. "It's not really all that much."

"What do you two do when you're not raising crickets?" I pried.

He grinned a bit and said,"we go fishing. We're both still avid fishermen — carry fishing rods in the van. We're always ready to drive twenty miles to Bundicks Lake on a minute's notice."

"And we fish with crickets, not worms," said Mrs. Nichols teasingly.

"Cuz that's because crickets are the best bream bait around!" added her husband. "And for some strange reason we always feel kinda guilty when we buy a box of worms!"



Take 'em with you!

This is dedicated to all the sportsmen who have to decide each time they take a fishing trip whether to take along that little son or daughter.

By Noble Mabou
Photography By Lloyd Poissenot

The school bus stopped in front of our house and kids were unloading and racing home, anxious to get in as much activity as they could before darkness forced them inside. My seven year old daughter Terri was no exception. She darted off the bus where Kim, four, was waiting. The afternoon had a special atmosphere about it because I had promised to take them fishing. My wife Jackie was just as anxious as they were – she is an avid perch fisherman.

After some time of getting everyone a pole and the necessary hooks, life jackets, and what-not, we headed out to the bayou with a small aluminum boat in the back of my pickup. The first stop was to get shiners, a few snacks, and a cold drink apiece to carry with us.

We arrived at the public launching ramp at Muddy Bayou in Saline Wildlife Management Area about 4 p.m. We put the boat in the water and paddled out about fifty yards. I tied up to some bushes that I had fished near earlier. This spot had paid off the Saturday before when the principal that I work for, his son, and myself caught 65 specs in a short time.

My wife and I did not have time to even put our hooks in the water when the girls began to catch fish. You would have had to be there to understand the excitement that went on. It was a moment I will never forget. Sometimes they would each have a fish on at the same time, plopping them around and making enough noise to scare off anyone else who was eyeing our spot.

Several times while I was baiting hooks and stringing fish I thought to myself, "Boy if I could just put my line in the water . . . I know where the big ones are." In the entire hour and a half we were there, I never did wet my hook. But, that doesn't matter now. Just to watch those two girls bring in 24 good specs was thrill enough for me.

This story, or one like it, could be repeated many times by those who have experienced the satisfaction of taking a kid fishing. Just to watch them tangle their line, a lot more than you think they should, and finally catch a good size fish is a moment of treasured excitement for both you and the youngster.

Taking the time to show someone who is trying hard to learn how to tie a hook on a line and then hook on a wiggling shiner can have its lighter moments if we bring along our sense of humor.

I personally believe that patience is the key to the whole process (a virtue of which I sometimes fall short). It takes deep down concern for some of us to realize that in order to lead others we must first give something of ourselves. It is not fair to the youngster for us to expect him to be able to cast his line with the same accuracy as an adult who has many years experience. We must *teach* him so he can develop the skills he needs to enjoy the sport.

But, you have to be very careful in helping a young fisherman. You may be developing a life-time fishing partner.

Just about every one of us can look back and remember that special someone who took the time to teach us the things that were enjoyable in life and helped us distinguish right from wrong. This person holds a dear place in our hearts because of it. Many lives are patterned after parents, neighbors, teachers, and friends who provided the personal direction youngsters need so desperately while growing up.

Some of my fondest memories of childhood revolve around the many fishing trips I took with my father. He had that certain touch that seemed to place his hook right where the "big ones" were. Many a time he would say, "You fish this spot . . . I believe it's the best. I'll move on down the bank a little." It was this kind of concern that let me know he was interested in me — and my catching a fish.

With today's pressures in providing for our families we find it difficult to spend enough time with our children while they are growing up. We mold the footsteps for our offspring and pray they will follow. Our parents were no exceptions and times were just as hard (or worse) for them as it is for us. Yet, we are entrusted with the responsibility of guiding and educating the young generation to be the leaders of our country in the future. So, a little extra effort now is a good investment.

I can think of no better atmosphere for communication between father/son or father/daughter than the middle of a lake on a warm spring day waiting for a "lunker" to bite. A lot of problems our teenagers have could be prevented if a little more time was spent fishing with them in pre-adolescent years. It is here, not in the classroom, that real values of sportsmanship are taught.

As a teacher, I see so many students who are "hungry" for the affection we sometimes neglect to give them. Not big expensive gifts . . . just a little attention or simple things. A seven year old doesn't care if he is fishing in a $5,000 bass rig with swivel seats or sitting on a bank with a cane pole and a can of worms. He just needs the opportunity to get there.

If you can spare the time and want to have a good feeling inside, take a kid fishing. Better yet, make time. But take heed — he may bring home the trophy.

By McFadden Duffy

Photography by Lloyd Poissenot

I am a roadrunner when it comes to pursuing lakerunners in May and June. I can't tell rumor from reality until I have dangled a hook at the place where these super sunfish are supposed to be schooled up. In my haste to tangle with these panfish I eavesdrop at counters in sporting goods stores . . . I dally around bait stands like a television secret agent waiting for a clue. As soon as my enthusiasm for lakerunners has been whetted in southeast Louisiana I start making inquiries about them in other parts of the state. Then with just a little encouragement, I'm off chasing chinquapins, the same fish by a different name.

Those fish I am after have an aura of mystery to them. If an angler is in the right place at the right time, they can be the easiest fish in the world to catch. At other times they can't be located and they can't be caught in numbers. Adding to the mystery of these favorite panfish is the fact they have bridged a generation gap. They seem to come in only two sizes — big and bigger. The young fish have to be growing up somewhere but they are never mixed in with the larger fish at catching time.

You can call them what you wish. In parts of Mississippi, Alabama, Georgia, and Florida they are called shellcrackers, principally because they possess a throatful of teeth well suited to crushing small snails and crustaceans.

They are also known as stumpknockers in the southeastern states. The name lakerunner comes from the fact that large schools of these panfish show up in May and June near the mouths of waterways entering the big tidal lakes in southeast Louisiana.

In most parts of the state they are called chinquapins, although there are some farmers who still call them "government brim." The latter name alludes to the fact that federal hatcheries produced millions of them for stocking in farm ponds. Even though they have many popular names, these fish remain something of an enigma. Actually they are redear sunfish and found just about everywhere.

Even though this range takes in most of the state, there are areas where population densities have been noted.

In these chinquapin hotspots, it seems that nature's ground rules are the same. There is excellent fishing for about two months in the year. Long stringers of hefty fish can be taken. It wouldn't be truthful to say that angling tapers off following this period of redear abundance. It ends abruptly! School's out, so to speak! It's true that occasional chinquapins will be taken later. Those that are caught after the bonanza are mostly solitary fish, taken in deep water.

Purists, who sing the praises of fine spinning and casting gear or who chant the satisfaction that a whippy flyrod can provide, must unmend their ways if they are to fully enjoy chinquapin fishing. Artificial lures and deluxe fishing rods are as out of place in this type of angling as a white linen suit at a crawfish boil.

Chinquapin fishing is an earthy sort of angling. Folks have to mentally roll up their sleeves to fully appreciate it. One doesn't have to be too particular about the bait: The garden variety of worms makes excellent bait. Grubs, catalpa worms, crickets, and grass shrimp are also used. On rare occasions anglers will take chinquapins on small lures used for bream; but such catches are an exception to the rule.

Cane poles, or any plastic store-bought version of the common fishing pole, are ideally suited to fishing redears. They are easier to handle than either casting rods or spinning tackle. This is particularly true in overflow areas where chinquapin fishing is normally productive in May and early June. Jutting stumps and brush piles, as well as low overhead branches, do not present as many hazards for the pole fisherman.

Coloration of the chinquapin may vary somewhat, depending upon the water area that produced the fish. Generally speaking, the body color varies from bronze to blue-green. Certain identification is provided by bright red edging on the gill flap. The marking may appear orange on the females but red or orange edging characterizes the fish.

Some of the mystery attached to redears can be dispelled when it is pointed out that they offer such keen sport to anglers only when they are getting ready to spawn. These "bedding" panfish have a tendency to collect into schools in April. If the weather has been mild, there's good fishing to be had in early April. Long, cold winters can push chinquapin spawning back a few weeks. Anglers generally agree that fishing is good in late April and is just about over in early June.

A cork, a Number 2 hook, a can of nightcrawlers, and a cane pole is all you need to chase chinquapins!

The main secret of catching chinquapins is to find them. And that is the reason for chasing them. Any report of a good catch of chinquapins can be interpreted to mean there's a spawning area not far from where the catch was made. It makes pretty good sense to reason that redear sunfish gather in large schools at suitable spawning spots. They don't gather into schools just to search for spawning areas. Look for areas that have sandy or gravel bottoms. They are best suited for nest building. If there is plenty of brush growing up from the bottom, as-well as jutting stumps and submerged weeds around the stumps, there's a good chance that cruising chinquapins will be attracted.

Unfortunately, many anglers locate chinquapin spawning areas but fail to find the fish feeding. As a result, they move on and scratch that particular spot off the list of possible areas. A word of advice would be to try the area again, on another day, before writing it off. There may be some reason why the fish stopped feeding.

They've got lots of names — shellcracker, stumpknocker, lakerunner, chinquapin, redear bream, yellow bream. But by whichever handle, the critter is fun to fight and tasty on the table!

Chasing Chinquapins

Redear sunfish are fast-growing and inclined to be chunky. A chinquapin will weigh more than any other panfish the same size. That's because of the thick body. These fish don't go in for aerial tactics when they are hooked. They put up a dogged fight and have a tendency to swim in circles after a few vain efforts to find shelter in convenient brush piles or standing vegetation.

Use of a cork or float is optional although most chinquapin anglers agree that No. 2 or No. 4 size hooks seem to take more fish. It is a good idea to fish at the same depth once a couple of redears have been taken. There's a definite tendency for the school to stay at a constant depth. Some fishermen cut down on their own success by not fishing deep enough. Chinquapins simply do not feed near the surface.

Early in the season, redear sunfish may be taken with other sunfish species, like the bluegill, pumpkinseed, and goggle-eye . . .

Sometimes a chinquapin will hit hard enough for an angler to boast later about the manner in which it took his bait. Chances are it was beating another fish to the bait. It just isn't often that one of these fish will demonstrate razzle-dazzle tactics.

There are anglers probably who will scoff at the idea of chinquapins offering more sport than big bluegills or fat crappie. These fish can put up a dogged fight and it is true they can be taken practically year around. Any angler who has been introduced to all-out fishing for redears knows this. He doesn't expect to find an aerialist when he flips his baited hook away from the boat and watches it slowly sink from sight. He'll settle for a tough little slugger that can make the tip of his cane pole bounce up and down.

The chinquapin he's seeking isn't a resident of some distant body of water, or a rare fish that is going to break some record. It is distinguished only by its determination to free itself through dogged maneuvering. The fact there are only about two months in the year during which they can be caught makes them very special fish. Unlike crappie and other bream, there is something special about redear sunfish. Their appearance is a seasonal thing. They're only around long enough to tempt fishermen. Finding them is a challenge. That's why it is good fun to go chasing chinquapins!

Years ago, famous chefs discovered that foods retained more natural flavor if steamed rather than boiled. This is especially true for many fresh vegetables and delicate entrees such as seafood. The flavor of seafood is heightened when cooked by the steam process.

Today, the imaginative cook lets the steam do the seasoning as well. A dish of melted butter for dunking and you wonder . . . why haven't I tried this before?

At a traditional East Coast clambake, clams are actually cooked by steam. Somehow, Louisianians never seemed to experiment with this medium until just recently when Vincent and Joe Vuskovich opened their new internationally famous Visko's Steam Room in Gretna, just across the Mississippi River from New Orleans.

There's no stove in the kitchen of this big restaurant, only two relatively small convection-type steam ovens. About 214 degrees is the top temperature produced in the twin ovens, but the rapid circulation of steam thoroughly cooks a half-dozen blue crabs in a matter of minutes. A large Maine lobster, for example, takes only 11 minutes.

Seasoning used by Visko's was located in Baltimore and is more subtle and milder flavored than the conventional crabboil seasoning ordinarily used in Louisiana. Locally, you can purchase McCormick's Seafood Seasoning, which is a blend of salt, celery seed, red pepper, spices, mustard flour and paprika. It's a close match to the real stuff.

"Timing is very important," Vincent says in explaining their technique. "It will take longer to steam crabs, for example, in a large pot where they are suspended in a rack over boiling water. It's a little more trouble, perhaps, but the

OW-TO: Cook With Steam

By Marian "Pie" Pendley
Photography By Lloyd Poissenot

exceptional flavor makes it worth the effort."

Necessity is the "Mother of Invention" and since we are not all fortunate enough to have a convection-type steam oven in our kitchens, we can improvise and yet achieve the same results in taste and quality as the food prepared by restaurants on a much larger scale.

HOW TO DO IT

First, obtain a 16 to 24 quart size canner (these can be purchased from any restaurant supply house). Remove everything but the bottom rack. Then using hardware cloth or mesh, make a screen to fit over the rack. This is important. You do not want the seafood to touch the water! However, keep the water boiling rapidly to furnish enough steam to cook the seafood.

Next, add the following ingredients to the steamer: 3 quarts of water, 1 lemon slice, 1 garlic toe, and 1 small onion, chopped. Then put the screen in place and cover. When the water has reached a rapid boil, add the seafood of your choice, cover the canner tightly, and steam to desired doneness.

Lobsters, oysters, and clams are steamed without any prior seasoning. Place them on the rack in single layers and cook approximately 25-30 minutes. Serve with a side dish of lemon butter sauce.

When preparing shrimp, crabs, and crawfish use a surface seasoning (sprinkle it on) of equal parts of coarse salt and McCormick's Seafood Seasoning before placing them in the steamer. Since the cooking is done in a closed atmosphere of live steam, the seasoning can be more delicate and little is lost. Cooking time will vary, of course, depending on the size of the pot, the density of the steam, and so forth . . . but crabs, shrimp, and crawfish should steam fully in about 15-20 minutes. They too are served with a dish of melted butter for dunking.

This is truly a different and unique way of treating the many forms of seafood available locally. Flavor of each is enhanced. Perhaps for the first time, you will really taste seafood in its pure form, without being over-powered by cooking oil or heavy rich sauces. Recipes which have been handed down from one generation to another in Louisiana have a distinct place in our rich heritage of Creole-Cajun cuisine; but they should not be compared with the concept of steamed cooking.

Benefits derived from this method of cooking are without limit. It is truly the cuisine of slimness, so it stands to reason that the calorie counters and diet-conscious people who haven't tried it – should.

Look around your kitchen and perhaps you already have something that will serve as a steamer. If you do, go get some seafood . . . and steam away.

Bon Appetit!

PIE'S POTPOURRI

By Marian "Pie" Pendley

STEAMED SHRIMP OR CRAWFISH

For each pound of shrimp or crawfish use:
1 tbsp. McCormick's Seasoning
2 tsps. salt.

Wash seafood, add seasonings, place on rack and steam until pink.

●

STEAMED FISH

1½ lbs. fish fillets
1½ tsps. salt

Place fish in a well-greased steamer insert pan. Sprinkle fish with salt. Cover and cook over boiling water for 5 to 10 minutes or until fish flakes easily when tested with a fork. Cool. Remove skin and bones. Makes 2 cups cooked fish.

●

STEAMED CRABS

1 dozen crabs
2½ tbsps. salt and seafood seasoning

Place crabs on platform in layers, sprinkling each layer liberally with seasoning and salt. Cover. Steam until crabs are red.

●

STEAMED VEGETABLES

3 carrots
3 potatoes
3 onions
3 celery sprigs
3 ears corn
1 head cauliflower, chopped
3 bunches broccoli
1 tsp. McCormick's Seasoning

Wash vegetables, sprinkle with seasonings, place on rack, and steam until tender. Serve hot with a bowl melted butter.

●

"WE GET LETTERS..."

Comments from LOUISIANA CONSERVATIONIST readers are welcomed. We will consider publishing any letter, whether it deals with a controversial subject, difference of opinion, request of the commission, or any other topic so long as it is signed. *Send them to: "We Get Letters," Louisiana Conservationist, LWLFC, 400 Royal St., New Orleans, LA 70130.* – *Ed*

Conservation Club Holds Wildlife Banquet

Dear Editor,

The Raceland Junior High School Conservation Club recently held its annual wildlife banquet in conjunction with its Wildlife Education Day. At the banquet we recognized an agent of the Louisiana Wildlife and Fisheries Commission.

Mr. Kerry St. Pe', a biologist with the Oyster Division, was recognized for his work with our club. Mr. St. Pe' has given unselfishly of his free time to assist us in individual and club projects, field trips, and with our Wildlife Education Day.

One of our club's goals is to make our community aware of the many services offered and research done by Louisiana Wildlife and Fisheries by individuals like Mr. St. Pe'.

Sincerely,
Gerald Babin
Club President
Raceland

L.C. Should Be Monthly

Dear Editor,

Let me say that I enjoy your magazine very much — I look forward to receiving each issue. I only regret that it is a bimonthly instead of a monthly publication.

Thank you,
Rick Brunner
Baton Rouge

Wants Squirrel Season Change

Dear Editor,

As a charter recipient of your fine magazine, I would like to comment on our squirrel hunting season.

It seems to me, plus lots of others, that our overall hunting would be much better if the season opened about three weeks later and closed correspondently later. My reason is the great number of sows killed that are suckling young. That knocks us out of a good crop for the following season. We see far too many rat size ones, and some are killed.

Would like to see a comment on the above.

Thanks,
N.F. Roberts
Jonesboro

Dear Mr. Roberts,

According to Joe Herring, chief of the Game Division, young squirrels in the population reflect good breeding success and a healthy growing condition. Also, the largest proportion of young squirrels are born in the spring and by the time hunting season opens they have grown to adult size.

Squirrel population reaches its peak in early October and is ready for harvest, even though some young squirrels still persist. Research conducted by our office for many years shows that hunters harvest only about 25-30 percent of the total fall population. If the season were delayed, sportsmen would lose the advantage of being able to hunt while the majority of the acorn crop is still on the trees and the squirrels are still feeding above ground. Once squirrels begin ground feeding, hunting success declines. The real waste occurs then because the unharvested animals succumb to natural mortality without any benefit to the hunter. -*Ed*

Wild Turkey Stamp-Print Available

Dear Frank,

The 10,000 member National Wild Turkey Federation has introduced its first annual wild turkey stamp.

The program has been designed to closely rival the federal duck stamp in both investment and fund-raising potential. All proceeds go toward education, restoration, and purchase of wild turkey habitat.

The colorful design selected for the stamp was donated by noted Florida wildlife artist Russ Smiley and features the Florida wild turkey, OSCEOLA. In addition to the limited stamp sale (50,000 printed), 1,000 signed and numbered-edition prints have been produced. With over a million wild turkey hunters in the country today, the supply of both should be exhausted quite rapidly.

Full-color turkey prints are available at $63 unframed and $110 framed with the stamp included. Stamps are $3 each and they're fully tax-deductible. Ask your readers to send their orders to: Wild Turkey Stamp, P. O. Box 467, Edgefield, SC 29824.

Thanks much,
Tom Rodgers
Executive Director
National Wild Turkey
Federation

She Likes the Conservationist

Dear Editor,

As a native of Louisiana, my heart swells with pride for the excellence of the Conservationist. I send each copy hither and yonder to friends and relatives, with the hope that its well-written, informative articles will convince them that our state isn't a swamp overrun with alligators . . . or illiterates.

Thank you for sending us the Conservationist.

Pridefully yours,
Mrs. Blair E. Reed
Austin, Texas

CONSERVATIONOTES

— ABOUT BOATS AND CITATIONS —

Department officials are stepping up their efforts to enforce boat registration laws and a lot of Louisianians are going to be receiving citations and fines.

It's estimated there are at least 55,000 unregistered boats now operating on bayou state waters.

Under Act 197 of the 1975 Legislature, any boat equipped with or propelled by any type of machinery must be registered with the department. A lot of people have gotten the message. By the end of last year, the department had registered 239,575 boats, and 78,564 of them went on the books during 1976.

— CHALK UP ONE FOR THE HYACINTH FIGHTERS —

Department biologists expect this coming year to see a substantial reduction in the acreage infested with water hyacinths. The drop can be attributed to the successful and continuing program of herbicide application, including for the first time the aerial application of herbicide over 7,000 acres in the Atchafalaya Basin and lower Terrebonne Parish, low water (especially in the Basin), and a cold winter.

Don Lee, coordinator of the hyacinth control section, said last fall was the first time helicopters had been used on a statewide basis to spray herbicides. The choppers, which were used as part of the regular and continuing hyacinth control program, proved to be more economical to use in certain areas than boats.

Lloyd Poissenot

Lloyd Poissenot

— A FISHERY FOR SHARK? —

The shark in Louisiana has never been much more than a curiosity or a sea-going nuisance. Certainly the fact that the shark is literally "money on the fin" has gone unnoticed. However, the shark's monetary future, at least for Louisiana's commercial fishermen, gets brighter each day.

For example, Battistella's Sea Foods, Inc. sold roughly one-half million pounds of shark meat in 1976, according to Harlon Pearce, the firm's general manager. The biggest customer was the Orleans Parish School Board, but there were various other local and out of state customers. Shark is excellent for school menus because children don't have to worry about bones.

Pearce says the present market for shark is "not good but it is getting better." He points out that as other species, including redfish and speckled trout, become less available the demand for shark meat will increase, not only because of cost but also because it compares favorably with any fish as to taste and food value.

There are various programs underway to not only promote the shark as a food fish but also to find uses for such items as shark skin, teeth, and dried and salted fins. Each of these is in great demand in other parts of the world.

— COCODRIE, GATORS, AND WINN —

Bill Winn, head of the department's movie section may have webbed feet before his next assignment is finished.

He's soon going to be moving his headquarters down to Rockefeller Refuge to begin filming, on location, "Cocodrie," a 30 minute color/sound documentary on the Louisiana alligator.

The shooting schedule for the film calls for at least a year's work out in the coastal marshes, mostly in Cameron Parish. Winn will be recording the life history of the gator and the animal's importance to the people of South Louisiana.

He'll also be documenting the department's alligator management program which is the most recognized one of its kind in the world. Wildlife and fisheries has been extremely successful in protecting the alligator's environment and in restoring the reptile's population to optimum levels.

Winn currently is concluding production on films on freshwater fishing and the restocking of the striped bass. Both movies were shot by Bob Dennie, information officer, and are expected to be available for distribution in the next few months.

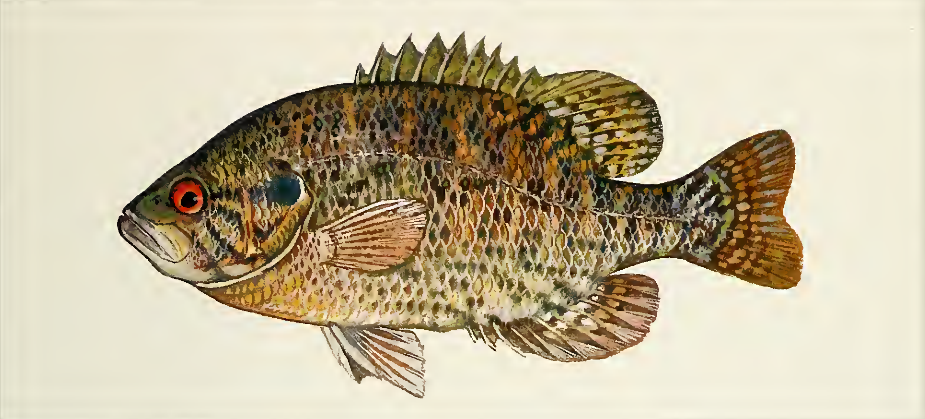
— LONG LIVE THE KING —

Ted Joanen, research leader of the department's refuge division, was named king of this year's Fur and Wildlife Festival in Cameron.

Theme of the festival was the American Alligator. Joanen, an internationally recognized leader in efforts to conserve the valuable reptile, was an appropriate choice to reign over the festivities. He's known for his scientific research, including over 40 papers and articles on such subjects as furbearers, waterfowl, wetland habitat, and marsh and alligator ecology.

Joanen has been with the department for 14 years. He serves as leader of the alligator recovery team, the group appointed by the U.S. Department of the Interior's Office of Endangered Species to re-establish the gator in its natural habitat. He is also chairman of the alligator committee of the Southeastern Association of Game and Fish Commissioners.

Jenny Sue Bird of Luling was chosen queen of the festival.



FISH OF LOUISIANA

ILLUSTRATED BY DUANE RAVER, JR.

THE WARMOUTH

The warmouth (Lepomis gulosus) is known in Louisiana by the colorful colloquialism *goggle-eye.*

The fish is found from Minnesota east through the Great Lakes to western Pennsylvania, south to Texas and Florida, and throughout Louisiana.

The warmouth, a sunfish, is in the same genus as the two most popular panfish in Louisiana, the bluegill and the redear sunfish. It is a brassy dark olive green and in most specimens dark spots on each scale form horizontal stripes on the body. It is commonly confused with the rock bass and the green sunfish, but can be differentiated from the rock bass because it has three spines on its anal fin instead of the bass's six and from the green sunfish in having teeth on the tongue, a mottled color pattern, and dark bars radiating from the eye to the rear of the gill cover.

The warmouth shows a greater tolerance for muddy water than other sunfishes and seemingly prefers shallow, weedy, mud-bottomed, slow moving streams and lakes. It does most of its feeding in the morning on crawfish, aquatic insect larvae, and smaller fishes.

Spawning normally occurs after the water has reached a temperature of 70 degrees Fahrenheit and continues throughout the summer and into the fall. The male selects a site and constructs a nest by fanning a shallow depression in sand, gravel, dead leaves, sticks or mud. Nests are usually found with those of other sunfish species and at depths of from two to six feet. The males guard their nests, the females are attracted to them, and spawning occurs after a brief courtship.

Eggs adhere to debris or pebbles and a single female may spawn in several nests or one nest may be used by several females. The various sunfishes do interbreed, but hybrids seldom occur in large numbers, apparently because different species do not respond to courting signals of other species. Males will protect the fry for several days after hatching but they will sometimes become cannibalistic, especially when other food is scarce.

The warmouth is not usually considered a prime game fish and is most often taken incidental to fishing for other species. Its initial strike of a baited hook or lure, however, is vicious. It will take flies, small floating bugs, or small minnows.

Warmouth, compared to other sunfishes, are relatively long-lived, surviving to at least seven years. The state record of one pound eight ounces was caught by Allen Polk in September of 1973. World record for the species is an even two pounds and was taken in Sylvania, Georgia in May of 1974.